If you are using a printed copy of this procedure, and not the on-screen version, then you <u>MUST</u> make sure the dates at the bottom of the printed copy and the on-screen version match.

The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ Training Office, Bldg. 911A

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.42.b Switch Yard Gate Tests

C-A-OPM Procedures in which this Attachment is used.					
4.120.42					

Hand Processed Changes

HPC No.	<u>Date</u>	Page Nos.	<u>Initials</u>	
				
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		<u>Signature on File</u> der-Accelerator Departn		Date

4.120.42.b Switch Yard Gate Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:	Checksum:
Division B Software Filename and Checksum: Title:	Checksum:
Initial testing complete:	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date:/
Acceptance test procedure complete (following repairs and retesting if required)):
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date:/
Test results reviewed by:	
Safety Section Head's Name (Print):	Life Number:
Safety Section Head's Name (Sign):	
Test results accepted by Radiation Safety Committee:	
RSC Member's Name (Print):	Life Number:
RSC Member's Name (Sign):	_ Date:/

1.1 **CONDUCT** Visual check on **Switch Yard** gates following Table-1, below

	Micro S	Micro Switch			Verify		
Gate	Verify Align OK	Verify Opern OK	Verify Elec Wiring OK	Verify Gate Box OK	Open/Close Fctns OK	Verify all x's Corr.	Inspn OK Init.
Switch Yard East (Swyd-E)							
Switch Yard U/S Escape (Swyd-Use)							
Switch Yard D/S Escape (Swyd-Dse)							
A Target (ATgt)							

Legend: Tick = O.K. x = Problem N/A = Not Applicable

Table 1: Summary of Physical Inspection of AGS Gates

Check for acceptance of Visual check on AGS gates

1.2 Test of Switch Yard East gate

	VERIFY	Hardware \square , Electrical \square at Swyd-E gate is	OK
	PLACE	Swyd in Res. Acs. (RA) from MCR with 693 key and Light/Button	
	VERIFY	(L/B) on U-Panel MCR sees at U-Panel SWYD in	RA
	VERIFY VERIFY VERIFY	At encls 2216 (inside) and 2215 (outside) RA light is At encls 2216 and 2215 Beam Disabled light is At encls 2216 and 2215 Beam Operational light is	ON ON OFF
	VERIFY	Attempt to open Swyd-E gate with black P/B is	SUCCESSFUL
	HOLD VERIFY	Crash glass microswitch (CGS), gate m-switch (GS) and Latch switch (LS). At enclosures 2216 and 2215 Crash glass light (CGL) □, Gate light	CLOSED
	OPEN VERIFY CLOSE VERIFY	(GL) □ and Latch light (LL) □ are CGS CGL □, GL □ and LL □ are CGS and keep closed CGL □, GL □ and LL □ are	ON OFF ON
	OPEN VERIFY CLOSE VERIFY	GS At encls 2216 and 2215 GL □ and LL □ GS and keep closed CGL □, GL □ and LL □ are	OFF CLOSED ON
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	VERIFY CLOSE	At encls 2216 and 2215 LL LS	OFF
	VERIFY	CGL □, GL □ and LL □ are	ON
_	RELEASE	GS and LS	
	HOLD	Redundant gate microswitch (RDS)	CLOSED
	VERIFY	At encls 2216 and 2215 Redundant gate light (RGL) is	ON
	VERIFY	MCR sees at U-Panel Swyd-E gate RDS	CLOSED
	OPEN	RDS	
	VERIFY	At encls 2216 and 2215 RGL is	OFF
	VERIFY	MCR sees at U-Panel Swyd-E gate RDS	OPEN
	CLOSE	Swyd-E gate	
	PLACE	SWYD in Con. Acs. (CA) from MCR with 693 key and L/B on U-Panel	
	VERIFY	MCR sees at U-Panel SWYD in	CA
П	VERIFY	At encls 2216 and 2215 RA light is	OFF
	VERIFY	At encl 2216 Beam Disabled light is	ON
П	VERIFY	At encls 2216 and 2215 Not Reset light is	ON
_			
	RESET	Swyd-E gate at encl 2215 with BNL 11 key	
	VERIFY	At encls 2216 and 2215 Reset light is	ON
	VERIFY	MCR sees at U-Panel Swyd-E gate	RESET
	VERIFY	Attempt to open Swyd-E gate at encl 2215 with BNL 11 key and	
		Sim. release on W-Panel from MCR	SUCCESSFUL
	VERIFY	At encls 2216 and 2215 Not Reset light is	ON
	VERIFY	MCR sees at U-Panel Swyd-E gate	NOT RESET
	CLOSE	Swyd-E gate	
	VERIFY	MCR sees at U-Panel Swyd-E gate RDS	CLOSED
	Check for	r acceptance of Test of Switch Yard East gate	
Test	of Switch Ya	rd Upstream Escape (Swyd-Use) gate	
П	VERIFY	Handrian	ОК
Ц	VEKII I	Hardware □, Electrical □ at Swyd-Use gate is	OK
	PLACE	Swyd in Res. Acs. (RA) from MCR with 693 key and Light/Button	
	VERIFY	(L/B) on U-Panel MCR sees at U-Panel SWYD in	RA
	VEKIF I	MCK sees at U-Pailet SW 1D III	KA
	VERIFY	At encls 2416 (inside) and 2415 (outside) RA light is	ON
	VERIFY	At encls 2416 and 2415 Beam Disabled light is	ON
	VERIFY	At encls 2416 and 2415 Beam Operational light is	OFF
	VERIFY	Attempt to open Swyd-Use gate with black P/B is	SUCCESSFUL
	HOLD	Crash glass microswitch (CGS), gate m-switch (GS) and Latch switch	CI OGED
	VERIFY	(LS). At enclosures 2416 and 2415 Crash glass light (CGL) □, Gate light	CLOSED
	, LAIF I	(GL) \square and Latch light (LL) \square are	ON
	OPEN	CGS	
	VERIFY	$CGL \square$, $GL \square$ and $LL \square$ are	OFF
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	CLOSE VERIFY	CGS and keep closed CGL □, GL □ and LL □ are	ON
	OPEN	GS	
	VERIFY	At encls 2416 and 2415 GL and LL CS and learn closed	OFF CLOSED
	CLOSE VERIFY	GS and keep closed CGL □, GL □ and LL □ are	ON
	, 2222 2		011
_	OPEN	LS	OFF
	VERIFY CLOSE	At encls 2416 and 2415 LL LS	OFF
	VERIFY	CGL □, GL □ and LL □ are	ON
_	RELEASE	GS and LS	
	HOLD	Daduu dant aata miana anitah (DDC)	CLOSED
	VERIFY	Redundant gate microswitch (RDS) At encls 2416 and 2415 Redundant gate light (RGL) is	CLOSED ON
	VERIFY	MCR sees at U-Panel Swyd-Use gate RDS	CLOSED
	OPEN	RDS	
	VERIFY	At encls 2416 and 2415 RGL is	OFF
	VERIFY	MCR sees at U-Panel Swyd-Use gate RDS	OPEN
	CLOSE	Swyd-Use gate	
	PLACE	SWYD in Con. Acs. (CA) from MCR with 693 key and L/B on U-	
	VERIFY	Panel MCR sees at U-Panel SWYD in	CA
_			
	VERIFY	At encls 2416 and 2415 RA light is	OFF
	VERIFY	At encl 2416 Beam Disabled light is	ON
	VERIFY	At encls 2416 and 2415 Not Reset light is	ON
	RESET	Swyd-Use gate at encl 2415 with BNL 11 key	
	VERIFY	At encls 2416 and 2415 Reset light is	ON
	VERIFY	MCR sees at U-Panel Swyd-Use gate	RESET
	VERIFY	Attempt to open Swyd-Use gate at encl 2415 with BNL 11 key and	
Ш	V LIXII I	Sim. release on W-Panel from MCR	SUCCESSFUL
	VERIFY	At encls 2416 and 2415 Not Reset light is	ON
	VERIFY	MCR sees at U-Panel Swyd-Use gate	NOT RESET
	CLOSE	Curryd I log goto	
	CLOSE VERIFY	Swyd-Use gate MCR sees at U-Panel Swyd-Use gate RDS	CLOSED
_	,		
	Check for	acceptance of Test of Switch Yard Upstream Escape gate	
Test	of Switch Yar	rd Downstream Escape (Swyd-Dse) gate	
	VERIFY	Hardware □, Electrical □ at Swyd-Dse gate is	OK
	PLACE	Swyd in Res. Acs. (RA) from MCR with 693 key and Light/Button	
		(L/B) on U-Panel	
	VERIFY	MCR sees at U-Panel SWYD in	RA
	VERIFY	At encls 2955 (inside) and 2954 (outside) RA light is	ON
	VERIFY	At encis 2955 (inside) and 2954 (outside) KA light is At encis 2955 and 2954 Beam Disabled light is	ON ON
	*	0.40.1 (X)	D

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	VERIFY	At encls 2955 and 2954 Beam Operational light is	OFF				
	VERIFY	Attempt to open Swyd-Dse gate with black P/B is	SUCCESSFUL				
	HOLD	Crash glass microswitch (CGS), gate m-switch (GS) and Latch switch (LS).	CLOSED				
	VERIFY	At enclosures 2955 and 2954 Crash glass light (CGL) \square , Gate light (GL) \square and Latch light (LL) \square are	ON				
	OPEN VERIFY	CGS CGL □, GL □ and LL □ are	OFF				
П	CLOSE	CGS and keep closed	Off				
	VERIFY	$\mathbf{CGL} \square$, $\mathbf{GL} \square$ and $\mathbf{LL} \square$ are	ON				
	OPEN	GS					
	VERIFY	At encls 2955 and 2954 GL \square and LL \square	OFF				
	CLOSE VERIFY	GS and keep closed CGL □, GL □ and LL □ are	CLOSED ON				
Ш	VERII I	CGL (), GL () and LL () are	ON				
_	OPEN	LS	OFF				
	VERIFY CLOSE	At encls 2955 and 2954 LL LS	OFF				
	VERIFY	CGL □, GL □ and LL □ are	ON				
	RELEASE	GS and LS					
	HOLD	Redundant gate microswitch (RDS)	CLOSED				
	VERIFY	At encls 2955 and 2954 Redundant gate light (RGL) is	ON				
	VERIFY OPEN	MCR sees at U-Panel Swyd-Dse gate RDS RDS	CLOSED				
	VERIFY	At encls 2955 and 2954 RGL is	OFF				
	VERIFY	MCR sees at U-Panel Swyd-Dse gate RDS	OPEN				
	CLOSE	Swyd-Dse gate					
	PLACE	SWYD in Con. Acs. (CA) from MCR with 693 key and L/B on U-Panel					
	VERIFY	MCR sees at U-Panel SWYD in	CA				
	VERIFY	At encls 2955 and 2954 RA light is	OFF				
	VERIFY	At encl 2955 Beam Disabled light is	ON				
	VERIFY	At encls 2955 and 2954 Not Reset light is	ON				
	RESET	Swyd-Dse gate at encl 2954 with BNL 11 key					
	VERIFY	At encls 2955 and 2954 Reset light is	ON				
	VERIFY	MCR sees at U-Panel Swyd-Dse gate	RESET				
	VERIFY	Attempt to open Swyd-Dse gate at encl 2954 with BNL 11 key and					
	VEDIEV	Sim. release on W-Panel from MCR	SUCCESSFUL				
	VERIFY VERIFY	At encls 2955 and 2954 Not Reset light is MCR sees at U-Panel Swyd-Dse gate	ON NOT RESET				
			_,				
	CLOSE	Swyd-Dse gate MCP good at II Panal Swyd Dse gate PDS	CLOSED				
	VERIFY	MCR sees at U-Panel Swyd-Dse gate RDS	CLOSED				
	☐ Check for acceptance of Test of Switch Yard Downstream Escape gate						

1.5 Test of A Target (ATgt) gate

	VERIFY	Hardware □, Electrical □ at ATgt gate is	OK
	PLACE	Swyd in Res. Acs. (RA) from MCR with 693 key and Light/Button	
	VERIFY	(L/B) on U-Panel MCR sees at U-Panel SWYD in	RA
	VERIFY VERIFY VERIFY	At encls 3633 (inside) and 3632 (outside) RA light is At encls 3633 and 3632 Beam Disabled light is At encls 3633 and 3632 Beam Operational light is	ON ON OFF
	VERIFY	Attempt to open ATgt gate with black P/B is	SUCCESSFUL
	HOLD	Crash glass microswitch (CGS), gate m-switch (GS) and Bolt switch (BS).	CLOSED
	VERIFY	At enclosures 3633 and 3632 Crash glass light (CGL) \square , Gate light (GL) \square and Bolt light (BL) \square are	ON
	OPEN VERIFY	CGS CGL □, GL □ and BL □ are	OFF
	CLOSE VERIFY	CGS and keep closed	ON
		CGL □, GL □ and BL □ are	ON
	OPEN VERIFY	GS At encls 3633 and 3632 GL □ and BL □	OFF
	CLOSE VERIFY	GS and keep closed $CGL \square$, $GL \square$ and $BL \square$ are	CLOSED ON
	OPEN VERIFY	BS At encls 3633 and 3632 BL	OFF
	CLOSE VERIFY	BS CGL □, GL □ and BL □ are	ON
Ц	RELEASE	GS and LS	
	HOLD VERIFY	Redundant gate microswitch (RDS) At encls 3633 and 3632 Redundant gate light (RGL) is	CLOSED ON
	VERIFY OPEN	MCR sees at U-Panel ATgt gate RDS RDS	CLOSED
	VERIFY	At encls 3633 and 3632 RGL is	OFF
	VERIFY	MCR sees at U-Panel ATgt gate RDS	OPEN
	CLOSE	ATgt gate	
	PLACE	SWYD in Con. Acs. (CA) from MCR with 693 key and L/B on U-Panel	
	VERIFY	MCR sees at U-Panel SWYD in	CA
	VERIFY	At encls 3633 and 3632 RA light is	OFF
	VERIFY	At encl 3633 Beam Disabled light is	ON
	VERIFY	At encls 3633 and 3632 Not Reset light is	ON
	RESET	ATgt gate at encl 3632 with BNL 11 key	ON
	VERIFY	At encls 3633 and 3632 Reset light is	ON
	VERIFY	MCR sees at U-Panel ATgt gate	RESET
	VERIFY	Attempt to open ATgt gate at encl 3632 with BNL 11 key and Sim. release on W-Panel from MCR	SUCCESSFUL

	VERIFY VERIFY	At encls 3633 and 3632 Not Reset light is MCR sees at U-Panel ATgt gate		ON NOT RESET
	CLOSE VERIFY	ATgt gate MCR sees at U-Panel ATgt gate RDS		CLOSED
	Check for	acceptance of Test of Switch Yard Downstream	m Escape gate	
		END OF TEST PROCEDURE		
TTL: Sign	for completio	n of initial testing:		
			Date://	
TTI · Sign	for completic	on of final tacting.		
T TL: Sign	ioi compieud	on of final testing:		
			Date://	